

MULTI-CHANNEL POWER LINE EXCHANGE PROTOCOL

Abstract of the Disclosure

A scalable networking protocol that allows multiple nodes to communicate via a multi-channel network medium is described. The networking protocol allows any node on the network to assign itself as the active network server. The active network server polls client nodes based on a lineup card. The lineup card includes a high priority queue for low-latency devices, and a low priority queue for devices that can tolerate higher latencies. Network information is sent on the channels as fragments. The protocol provides bad-channel detection and retransmission of fragments in a fragment-by-fragment basis. Support for streaming data or asynchronous data is provided by allocating time slots on the network and allowing two intelligent nodes to talk directly to each other during count-limited token sessions, as arbitrated by the active network server. The network node serving as the active network server can be changed on a dynamic basis, and is typically determined by the first node initiating a transmit request on a sleeping network. Client nodes are addressed by dynamic-polling using an address isolation scheme.

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